Distr.
LIMITED

PPD.34
15 May 1987

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

ENGLISH

First Consultation
on the Fisheries Industry

Gdansk, Poland, 1-5 June 1987

THE INTEGRATION OF WOMEN IN THE FISHERIES INDUSTRIAL SYSTEM *

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in co-operation with

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into Industrial Development

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V.87-85205

Preface

The contribution of women to the industrialization process of their countries is a vital element in overall economic and social development. Women are increasingly participating in and contributing towards the industrialization process - be it in the small-scale and informal production sector where their contribution is largely unrecorded but indispensable in supplying rural and urban community needs - be it in the modern industrial sector where the majority of women are limited to a small number of low skill and poorly rewarded jobs. Women's contribution to manufacturing is, however, not limited to production work only. Women are also involved as entrepreneurs and in production related activities namely in government administration, industrial research, quality control, marketing, etc. However, training opportunities for women in industrial production skills are insufficient and are largely limited to traditional occupations. Vocational guidance and career counselling to women students is generally inadequate. Specific measures are required to increase the number of trained and qualified women. The emergence of high technologies is rapidly changing the conditions of the international production system and the skill content in manufacturing activities is undergoing significant changes. Human resource development will increasigly provide the competitive edge in industry. Export oriented industries are among the first to be affected. The significance of this development for women is obvious. If women are to partake in this process on an equal footing with men, careful analysis of their present contribution is needed and the prerequisites for their future participation have to be determined.

The Nairobi Forward-looking Strategies for the Advancement of Women called for key measures to promote the participation of women in the industrialization process, both as agents and beneficiaries of development. The General Conference of UNIDO in December 1985 in its resolution GC.1/Dec.29 stressed the important role of UNIDO in the implementation of the Nairobi Forward-looking Strategies as they related to industrialization and the need to facilitate the integration of women in its programmes.

The present summary paper on the integration of women in the fisheries industrial system has been prepared by the Sectoral Studies Branch as part of a major study on industrial development strategies for fishery systems in developing countries. A special document on the integration of women in the fisheries industrial system is to be available in late June.

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1. INTRODUCTION

1.1 Overview

As of 1981, there were an estimated 15 million people directly employed in the fisheries sector of developing countries and likely an equal number indirectly employed in support areas such as processing, transportation, marketing and boat building. Small-scale fishing persons may account for as much as 90 per cent of the direct employment in the sector and harvest about 33 per cent of fish consumed worldwide.[1/] As a contribution to national economic and social development, the importance of the fisheries sector is widely recognized, especially for the rural areas. While the number of men working in the sector and the job or tasks they perform has received considerable attention in both urban and rural areas, the role of women in the sector's employment has until recently received minimal attention.

In both urban and rural areas, the extent of women's contribution to food production and marketing has been underestimated and undervalued. Recently, studies and research, especially on rural, small-scale fishing communities, suggest that women's involvement is anything but minimal. Although not actively involved in the extraction of marine-based catch, from the moment the vessels dock, women are involved in all aspects of unloading, processing, distributing and marketing the fish. In most cases, however, their contributions are undervalued and/or unremunerated and considered as a mere extension of regular household work and maintenance. If remunerated, whether in rural or urban jobs, women are usually at the lowest level of the skill and occupational hierarchy and receive marginal pay.

With increased, albeit largely undocumented, evidence of women's contribution to the fisheries sector in developing countries, has come acknowledgement that women's participation is important to the successful growth and development of the overall sector. Similarly, from both the literature on women in fisheries and from the conclusions of the current paper, there is recognition that: (a) women should be integrated more thoroughly into fisheries industrial activities; (b) their contributions can, and should be, enhanced or upgraded; and (c) a variety of human resource measures are needed to effect this enhancement.

UNIDO is preparing a study on human resource measures needed to enhance women's role in the fisheries industrial system. Only highlighted in this abbreviated overview, the completed paper presents a discussion and synthesis of country-level policies and actions needed to enhance women's integration to sectoral activities. Also, the paper provides a prototype approach that can be used to analyze the current and potential involvement of women in a country's fisheries industrial system; from the analysis, specific development policies, strategies and actions can be developed that are directed towards both the health of the sector and the productive, positive deployment of women within it. The general approach used in the study is based upon a methodology developed for another UNIDO study for analyzing the fisheries sector as a whole in developing countries. The methodology employed follows a systems approach and enables the analyst, planner or policy maker to target development strategies and actions to one of nine, individual components of defined sectoral activities.

1/ FAO, "The economic and social effects of the fishing industry: A comparative study", prepared by Helga Josupeit, FAO Fisheries Circular No. 314, Revision I (Rome: Food and Agricultural Organization, December 1981).

The detailed, micro-level analysis that can be conducted with this type of approach is useful for looking at the role and integration of women. This is because the current/potential involvement of women can be viewed in relation to any or all components throughout the sector. Consequently, the approach brings together both the economic/industrial trends of the sector's development and the needs/contribution of women. Theoretically, using this approach, the impact of technological, structural, or socio-economic changes occurring in one component can be seen on the others. Similarly, repercussions from investments or policy actions channelled into one component can be examined in others.

This type of approach is also useful for looking at, and identifying, policies and actions for women. This is because investments in one component of the system can easily affect the role of women in other components. For example, increased investments in larger, mechanized boats may diminish the importance of women in marketing in rural fishing communities. The larger boats make it possible for fishermen to service larger markets in urban areas directly. The rural women are, as a result, bypassed. Similarly, investments in mechanized processing equipment may render women redundant. In the case of human resource policies and actions, ones initiated on a combined knowledge of the economic/industrial system and identified women's needs, are likely to be more effective than ones based solely on women's needs. The approach employed for this study should result in the creation of human resource measures that will help decision makers:

(a) Enhance women's ability to respond to sectoral changes;
(b) Prepare them for productive employment in other sectors; or
(c) Offer them options for productive activity outside the fisheries sector.

Increasingly, questions asking "development for whom?" are being raised. In the case of women, especially women in rural fishing villages, the question is important. This is because industrialization is bound to bring with it, changes in technology, productive processes and workplace organization. Frequently, such changes completely displace women because their tasks are automated, or the men take over the innovations for themselves. While there is no desire on anyone's part to obstruct such changes, simply because of their impact on women, there is a need to ensure that women continue to have productive, gainful options when they occur. The evidence is not totally in as yet on whether women should continue to be prepared for fisheries-related activity and even less on whether young girls should have fishing-related employment as a goal. The approach used in this study, however, should make it possible to answer these and similar questions more clearly, and to suggest concrete strategies or actions for meeting industrial system needs and enhancing women's involvement.

1.2 Approach

The study intends to provide a basis for forming concrete measures of action that can be undertaken by different parties for supporting the integration of women in the fisheries industrial system of developing countries. The study's objectives are as follows:

(a) To identify the present role of women in fisheries sector employment;
(b) To identify the potential for expanding women's role;
(c) To identify strategies for increasing women's role; and

(d) To identify specific industrial development changes that may erode women's productive role and, where possible, appropriate remedial actions.

The study, as mentioned earlier, is closely related to another UNIDO study on the fisheries industrial system (FIS)[2/] in developing countries. The FIS study provides the following inputs to the present paper on women's FIS integration:

(a) Analytical approach;
(b) Identified, country-level FIS patterns of development;
(c) Relevant strategies for further country-level FIS development;
(d) Enhancements and constraints anticipated in the development process; and
(e) The established database for characterizing the FIS in three countries chosen as case study sites for this paper.

Three countries were selected for case study sites on the role of women in the FIS. The countries, Indonesia, Mexico, and Senegal, were chosen on the basis of: cross-continent comparison, different FIS patterns of development and available information. Time and budget constraints limited the amount of qualitative and quantitative information gathered about women's role in any of the countries. The involvement of women in each country's FIS, however, was examined systematically; it is this action, along with the collected material, that is perhaps the most valuable contribution to analyzing women's role from a sectoral perspective.

The choice of approach and methodology[3/] was determined by the desire to present a more comprehensive view of women's present involvement and the potential role they can occupy in fisheries development. The point of reference within which women's role was analyzed, is called the Fisheries Industrial System. The concept of FIS stems from the Methodology for Evaluation and Programming of Consumption/Production Systems (MEPS) and is based on the notion of an integrated systems approach that recognizes and quantifies the interdependence of economic and social components within and outside a given sector.[4/]

2/ Industrial development strategies for fishery systems in developing countries, PPD.30, Sectoral Studies Series No. 32, April 1987.

3/ For more detailed description please see document UNIDO/IS.643, Methodology for the assessment, programming and management of production and consumption systems, Sectoral Studies Series No. 27, 1986.

4/ The methodology comprising disaggregation, evaluation and programming of production/consumption systems components was originally developed by the Andean Pact Secretariat and completed with the co-operation of UNIDO's Sectoral Studies Branch. UNIDO documentation of MEPS consists of: (1) Manual for applying the system approach in collecting, disaggregating and systematizing information; (2) Accounting model of technical and behavioural micro-economic relationships; (3) Micro-computer programmme of the accounting model.

The fisheries industrial system can be defined as a system where all industrial production and consumption components related to the fisheries sector in a given country and the policies that affect them, interact in an integrated and interdependent manner. At the highest level of desaggregation, nine components have been identified as most appropriate for describing the system: resource, extraction, processing, distribution and marketing, consumption, industrial inputs, government policy, industrial organization and the foreign sector.

The study has four chapters. Chapter 1 examines briefly the problem being studied, the general situation of women in fisheries and an explanation of the methodology and expected outcomes.

Chapter 2 discusses the economic and industrial development aspects of the fisheries sector. Attention is given to the overall structure of the fisheries sector, especially in relation to developing countries, and to specific reasons for the choice of this study's country case study sites.

Chapter 3 features an in-depth look at the three country case study sites. The industrial/economic structure of each country's FIS is examined. Also, the situation of women within each component of the system is viewed. Implications of the FIS development for women in each of the countries is identified and comparisons and contrasts among the three countries are drawn.

Chapter 4 discusses specific, concrete development policies, strategies and actions important for the integration of women in fisheries in selected developing countries. These will be suggested courses of action resulting from a merging of the industrial/economic trends and the identified contributions of women. A synthesis of lessons learned and recommendations for human resource approaches that have been attempted by various government and donor agencies is also presented. Additionally, a summary section is offered of the study's implications for international aid and technical assistance donors.

The remaining portions of this working paper focus on the type of information that has been obtained and prepared for the final study. Sample baseline informational charts are included, along with brief explanations about the material. The concluding section is a brief discussion of preliminary human resource issues and recommendations that are emerging from the analysis.

2. BASELINE DATA AND INFORMATION

The following charts illustrate the type of information found in the study. This information has been prepared for each of the country case study sites and forms the basis for both chapter 3 (analysis of country case studies) and chapter 4 (policies, strategies and action).

Two charts have been prepared for each country. One chart focusses on the country's FIS. Included are the following informational elements:

- Development objective and fisheries sector development objectives
- Present constraints for the components of the FIS
- Enhancements of the country's FIS that can facilitate further development, along with identified components
- Strategies for fostering FIS development by identified components
- Plan of specific actions for identified components.

A second chart for each country depicts women's FIS involvement. Informational elements for these charts include the following, for each of the nine components comprising the FIS:

- Present role of women and the work they perform
- New or additional roles for women
- Constraints to women's involvement
- Development strategies, recommendations and actions for strengthening women's involvement and integration.

To facilitate the readers' interpretation of the chart detailing women's FIS involvement, the following definitions of the nine components are provided:

(a) Resource

This component describes the fish and crustacean resources available to an industrial system - how rich they are, how well they are managed and how they are split among marine, freshwater and aquaculture sources.

(b) Extraction

Also sometimes referred to as production,[5/] this component describes the type, condition, management and utilization of the labour and capital (especially the vessels) used in the harvesting of the resource. Foreign participation is also an important consideration.

(c) Processing

This component describes the type, condition, management, utilization and physical distribution of the labour, plant and equipment on the one hand, and their variable inputs and type of outputs on the other hand, used in the domestic processing of extracted fish and crustaceans.

5/ The term of extraction is preferred to production since it was considered ambiguous in the context of the analysis of an industrial system as a whole which has many other types of production.

(d) Distribution and marketing

These components describe the channels and methods used in the distribution of outputs from each FIS component to the next downstream component. Marketing intelligence is also considered.

(e) Consumption

The type, quantity, substitutability, price and income sensitivity, and desired nutritional requirements of domestic final goods demand of the system is described herein. Where appropriate, regional or other stratifications of the distribution of consumption (e.g. income) are also included.

(f) Industrial inputs

This component describes the extent to which intermediate and capital goods are domestically available to the FIS on the one hand, and the quality and state of domestic services and infrastructure (e.g. port facilities, roads, rail, etc.) on the other.

(g) Government policy

A description of the government's view towards the sector is included in this component. Hence, the existence of incentive schemes, subsidies, access to foreign exchange, and favourable macro-economic policies are noted.

(f) Ownership (industrial organization)

The industrial structure is described with respect to vertical and horizontal integration and concentration on the one hand, and with respect to public, private and foreign ownership distribution on the other.

(g) Export orientation

Describes the balance between production for export and for local consumption.

Chart 1. INDONESIA FIS

Development objectives	Present constraints (component)	Enhancements for further development (component)	Strategies (component)	Plan of action (component)
1. To raise the income and standard of living of the small fishermen and fishfarmers 2. To increase the productivity of fishing efforts and boost the national fish production and employment 3. To increase fish consumption of the people 4. To increase exports of fishery products 5. To have better control of the utilization and management of fishery resources. Development policy 1. Priority placed on small-scale fisheries 2. Increase complementarity and co-operation between artisanal and commercial activities 3. More equitable participation in development and distribution of benefits	- Some major fishing grounds located far from markets and population centres (2) - Lack of incentives to move in offshore fishing (2) - Lack of appropriate technology/training in capture, - Fishfarming and artisanal processing (2,3) - Lack of finance (2,3) - Inadequate storage and handling facilities (2,3,4) - Lack of distribution/ marketing infrastructure in rural areas (4,5) - Fishing communities belong to the poorer section of the population (education, housing, health, nutrition)	- Present production 30% of MSY (critical overfishing in certain areas) (1,2) - Large artisanal sector (2) - Policies for resource management established (1,2) - Only 40% of artisanal catch is being processed (3) - Good potential for aquaculture (2,3) - Large domestic market (4) - Adequate local supply of energy (5) - The government places high priority on fisheries and provides high level of assistance (6) - Positive attitude to foreign investment (6)	- Increase use of artisanal fishermen and intermediate technology vessels in offshore fisheries (2) - Development of small-scale fisheries should be part of integrated rural development programmes (2,3,4) - Effective enforcement of policies of resource allocation to different fishing groups (1,2) - Creation of new employment possibilities in mariculture and sea farming (2,3)	1. Financial assistance a) BIMAS credit (fishermen and fishfarmers credit) for improvement of fishing vessels and gear and intensification of fish ponds. No collateral requirements, interest of 12% per year. Maximum loan equivalent value of 10 GT vessel or operation of 2 ha fish pond (2) b) Small investment credit: similar to BIMAS credit but requires collateral (2) c) Working capital credit: for supplementing small investment credit that but can be applied for separately. Maximum loan Rp 10 million and interest of 12% per year (2) d) Mini credit: for both investment and working capital provided by State banks at the village level. Loans range from Rp 10,000-20,000 (2) e) Midi credit: similar to mini credit, provided at district level. Loans range from Rp 200,000-500,000 (2) f) Credit facilities for structural and operational modification of trawlers (2) g) Loans to medium-scale operators (co-operatives or entrepreneurs) to encourage offshore and deep sea fishing (2) h) Subsidized prices of fuel, fishing materials, fertilizers and pesticides (2,3) i) Provision of infrastructure (ports, port facilities, distribution/marketing) 2. Technological development Through research, pilot projects, training and extension work. a) Marine fishing - Construction and operation of training vessels (2) - Large-scale fisheries enterprise provides technical and marketing assistance to small-scale fishermen (nucleus-estate smallholder (NES) concept) (2,4) - Research on waste fish utilization (2,3) - Post harvest techniques b) Aquaculture (intensification, extensification, diversification) - Brackishwater pond culture - assistance to small-scale shrimp - Hatcheries to intensify shrimp culture production. - Freshwater culture - assistance in production of fish and shrimp fry - Rice-cum-fisheculture - assistance in supply of fish fry - Mariculture 3. Institutional and supporting back-up - Assistance to co-operatives (production, processing, marketing) - Extension services to assist in harvesting (2), handling of catch (3), processing (3), marketing (4) - Newly established directorate for fisheries extension - Government fisheries enterprises agents of extension services - Compilation of statistics, surveys 4. Regulatory measures Re-allocation of fishing areas and limitation of fishing efforts in favour of the small-scale operators

Chart 2. INDONESIA - Women's involvement in FIS

Component	Present involvement of women	Further/enlarged opportunities for women	Constraints	Development strategies/ recommendations/action
Extraction (2) a) direct	- Almost nil in offshore sea-fishing - Minimal in aquaculture and in sea weed, mussels and sea worm gathering	- In fishfarming (enterprises) - Sea weed culture - Collecting fishfry, mussels, and sea worms	- Cultural religious values - Physically demanding work - Lack of appropriate technology (training, equipment) - Overexploitation, pollution of inshore waters	- Training in fishfarming techniques - Provision of credits (co-operatives) - General education to overcome culture barriers (extension workers) directed to men and women
b) indirect	- Preparation and selling of food to fishermen - Household economy	- Catering services on and offshore (commercial fishing)	- Lack of permanent structure premises - Low wholesale prices - Time factor	- Provision of stalls - Provision of rural infra-structure (water, sanitation, health, transport) - Training in nutrition and household economics (extension services)
Processing (3) a) artisanal sector	- Mainly women's work - Household industry for curing fish (salting, drying and smoking) for retail - Cottage industry for cleaning and sorting shrimp linked to the commercial export sector (cold storage companies) - Fish products, crispies, gelatin from sea weeds	- Increase/diversification of traditional processing - Involvement of more women in cottage industries linked with the export sector (co-operatives) - New lines of fish and sea weed products	- Cultural and religious obstacles (regional) - Access to investment and working capital - Hygiene (clean water) wastage - Technologies in processing - Security of supplies of raw material - Low remuneration for fish products	- General education to overcome cultural & religious obstacles - Improve conditions of credit availability for women - Training in new technologies for fish curing (waste reduction) - Possibilities for women in processing to hire/own a boat to provide secure raw material supply - Provision of sheds for shrimp cleaning, sorting - Assistance in diversification of fish products (acceptability/distribution) - Provision of sanitation/ hygiene facilities at landing sides
b) commercial	- Working as labourers in fish processing factories	- Setting up of women's enterprises in fish processing (co-operatives)	- Cultural and religious values - Low wages/poor working conditions (legislation) - Access to credit facilities - Lack of training in management and finance	- Wage legislation for women - Training courses in management - Increase credit availability
Distribution and marketing (4)	- 2/3 of women engaged in fishery related activities are involved in trade - Small middlepersons - Headload vendours		- Lack of knowledge of efficient marketing techniques - Lack of transport roads - Lack of appropriate storage facilities - waste of catch - Competition with big middlemen - Seasonality	- Training in marketing - Provision of roads and transport facilities - Adequate storage facilities - Market places with hygienic facilities

Chart 2. INDONESIA - Women's involvement in FIS (cont'd)

Component	Present involvement of women	Further/enlarged opportunities for women	Constraints	Development strategies/ recommendations/action
Consumption (5)	- Purchase, preparation and consumption - Financial management of household income/expenditure	- Improvement of nutritional level of the household's diet	- General income level low - Lack of knowledge of nutritionally balance diet (diversification) - Seasonality of fish harvesting effects prices (substitutability) - Access to fish in rural areas (uneven distribution)	- Encourage diversification of fish products to increase nutritional value and consumption level - Training courses (extension work) in family welfare/ nutrition
Industrial inputs (6)		- Making/repairing nets - Production of packaging materials		
Government policy (7)	- Ministry of Women Affairs - Equal opportunities explicitly recognized in state policy guidelines (GBHN) - Emphasis on integration of women in development - From government sponsored women's project (KWN, P2WN)	- Improvement of standard of living and productivity of fisher families (food and health conditions)	- Lack of clear operational steps - Lack of gender-specific data and surveys - Lack of understanding of the division of labour in fisheries(household level) - Cultural and religious values not properly understood - Underrepresentation in leadership and decision making	- Female extension workers stationed at programme sites (health, nutrition, hygiene, income earning opportunities) community education - Training of women leaders - Access to credit facilities - Specially designed training courses suited to the needs of women and their timetable - Inclusion of gender-specific analysis in formulation of development programmes (local specific frame) - Legal framework for advance- - ment of women (labour and wage laws) - Research/data collection on women's contribution to the family welfare - Provision of rural infra-structure - General education (man and woman) to enahnce status of women
Ownership (8) (industrial organization)	- Co-operatives (few examples of women's enterprises in processing and fish farming - Vertical integration of catch processing and trade within fishermen households - Integration via boat owner or trader (middlemen)	- Increase women's participation in co-operatives and group work among fisherwomen	- Unrecognized potential of women in adopting new technologies in processing marketing and management	- Stimulate formation of co-operatives (guidance) - Opportunities to obtain loans for women entrepreneurs. - Courses in management
System orientation (9) (export/local consumption)	- Primarily in production for local consumption (processing, trade) - Limited in export sector (shrimp cleaning and sorting)	- Increase participation in the export sector		

Chart 3. MEXICO FIS

Development objectives	Present constraints (component)	Enhancement for further development (component)	Strategies (component)
Objectives 1. Increase production with emphasis on generating more jobs 2. Increase domestic consumption 3. Increase exports **Development goals** 1. Double the present catch to 2 million tons including 400,000 tons from aquaculture 2. Generate 145,000 new jobs 3. Industrialize 60% of traditional form of fishing 4. Direct 90% of production to domestic market to increase per capita consumption (15 kg direct and 9 kg indirect) 5. Generate US$ 687 million from exports of prawns, tuna and argaso **Development policies** - Modernization of artisanal fishing with more emphasis on co-operatives - State participation in large-scale projects (joint ventures) - Stimulation of domestic private investment	- Concentration of main resources in two regions (1) - High value species reserved to co-operatives which are short of investment and working capital (1,2) - Aging fleet in need of replacement (2) - Increase in running cost (maintenance, fuel) (2,3,6) - Lack of inputs for aquaculture (2,6) - Lack of repair and maintenance facilities for the fishing fleet on land and handling facilities on-board (2,6) - Lack of market organization (4) - Lack of cold storage network (4) - Low income level and lack of low cost species available (5) - Lack of co-ordination between government, co-operatives and private producers in the sector (7,8) - Lack of credit finance (2,4)	- Large percentage of unexploited marine potential (1,2) - Good aquaculture potential (1,2) - Domestically available energy supply (6) - High government priority and financial assistance provided to the sector (7) - Local production of intermediate and capital inputs (6)	- Intensify exploitation of deep sea resources and diversify catch of medium-depth waters (2) - Give emphasis to the capitalization of co-operatives (2,3,4,6) - Provide training to improve operations of coastal fishermen (2) - Promote high technology in aquaculture and fish farming (2) - Diversify processing and preservation of fish (3,5) - Establish cold storage chain (4,5) - Co-ordination of national and regional distribution to increase fish supply throughout the country (4) - Promotion of new products on domestic markets (5) - Improve infrastructure of fishing ports (6) - Increase catch and processing productivity of species with export demand (2,9) - Promotion of joint-venture enterprises (8,9) - Simplify and decentralize administration (7)

Chart 4. MEXICO - Women's involvement in FIS

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
Resource management (1)	- Of a 6,000 workforce, 1,316 in Government Secretary of Fisheries are women, many in research and technical development posts - 1/3 of professional and technical staff of National Fisheries Institute are women - Women's participation is increasing in research positions related to aquaculture and applied technology - Women professionals from national administration involved with fishing communities - conduct training and community organization to generate better resource management and social well-being	- Women in rural fishing villages, having inadequate access to technical assistance and extension work - Lack of information and research about where women are, what they are doing, and what their needs are - Inadequate communication and information dissemination channels for women in villages to technical information/government assistance - Inadequate funds to implement full range of needed extension and technical assistance programmes throughout the country - Inadequate access of women to training and employment for management and technical positions throughout the fisheries system	- Increasing availability of extension work - Increase availability of extension and technical assistance services - Increase access of upper level resource management posts to women - Generate solid information base on which to plan policies, projects and decisions
Extraction (2) a) Marine and sea-going	- Very little, if any involvement, exceptions of influential fishermen widows, women known for courage/skill	- Traditional social taboos - women bring bad luck - Traditional division of labour - Need for long absences from home - Household responsibilities and childcare - Physical strength required for work	
b) Inland and coastal waters, lagoons and rivers	- Depending on location/species women are primary workers - small-scale fishing activities - Women collect molluscs or algae, fish with baskets, fish traps, or lines from canoes - Shrimp gathering - Collect small shells, snails, starfish and sand dollars	- Work may be seasonal - Social attitudes/traditions - Lack of equipment - Idea that only men's work is productive - Competition from household duties	
c) Aquaculture	- Raising of oyster, carp and trout cultivating via fish tanks - 1983 established 18 production units operated totally by women - Women raise food for fish, take care of the tanks, feed and raise fish, extract fish and prepare for processing - Involvement varies as per production scale - Small-scale production, women involved in all phases, production processing and distribution - Large-scale production, size of tank increases, men are mostly utilized	- Size of project and tanks must be monitored, large tanks mean male domination - Traditional beliefs about division of labour - Household duties of women	- Government sponsored programme under group known as United Agricultural Industries for Women - Currently incorporates 300 women per site, in 6 states, 54,000 total - Purpose is to incorporate women productively in rural areas without threatening traditional home base
Processing (3) a) Home-based fishing communities	- Involvement varies by location species - Women and children involved - tasks include unloading incoming boats, selecting, dry/curing, smoking, preparing fish for market - Family itself functions as economic unit - role assigned accordingly	- Idea that only men's work is productive, worth remuneration - Competing tasks for woman's time in the household - Traditional division of labour between men and women - Cultural/social constraints against wives/women being mobile to take more productive jobs elsewhere - Women not paid for much of their work	- Expand centres of artisanal training now found in two states - Provide special training for all tasks undertaken by women (artisanal processing) - In those areas where women dominate, provide courses in leadership training

Chart 4. MEXICO - Woman's involvement in FIS (cont'd)

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
b) Rural/ artisanal non-home based	- Plants or workplaces employ mainly women - Women responsible for cleaning fish, fileting fish, selecting fish and packaging and any preparation needed for distribution marketing phase, especially for shrimp and sardine - Where processing includes preparing food material, fish paste and clam paste women almost comprise total workforce - In some rural areas women/ children work together at the privately-owned sites, may do cleaning/shelling at home, then take products to warehouse for icing/packing/distribution, women may work on own or on co-operative basis.	- Work is seasonal and temporary, often on contract basis - women preferred for manual dexterity, little precedent/opportunity for advancement/management post - Equipment and techniques frequently antiquated, poor repair - Conditions at workplace unhygienic, crowded, unhealthy - Shift work is typical - Wages vary as per season and supply of product, species processed, location and ownership of enterprise - Women's dual responsibilities as homemakers - Pricing politics of different fisheries (where located, type of ownership, species processed) - Wage payment on piecework basis - Social benefits are minimal or non-existent, no life insurance, medical coverage, etc., only when women are co-operative members they receive minimal coverage - Traditional division of labour between men and women	- Where women in co-operatives, encourage banks to provide backing and financing - Train women in better processing techniques, supervision and management - Provide better processing techniques and equipment - Improve workplace conditions - Provide women with access to opportunities in management and supervisory responsibilities
c) Industrial/ commercial	- Women predominate at freezing and canning plants - Women are mostly labourers; management/ownership almost always male - In state-owned plant, women have moved into technical research positions and administration	- Work is on contract basis, is seasonal and temporary - Employment and wages unstable, likely on piecework - Little upward mobility for women - Inadequate training/education for more productive work on gainful employment in off-season - Traditional attitude about male/ female division of labour - Demand for women due to willingness to work for lower salary and for their greater productivity/adeptness; not reflected in comparative pay scales - State-owned plants, governed by labour laws, has some effect on hygiene and general workplace conditions	- Train women for management - Train women for supervisory position in industrial plants - Institute better labs, laws governing hygienic standards and security and female work force utilization - Provide women access to jobs at supervisory and management levels
d) Making of crafts/ jewelry/ related articles from fish catch	- Women participate in gathering/ extracting materials for craft-making - Women design and make artistic objects - Work may be done in groups or individually, on family basis in the home		- Centre of Arts Office in the Fisheries Secretariat gives training to women in marine art and design - Increase centres of artisanal training that are now located in 2 states, include marine design training, especially in areas of tourist activity - Encourage banks to provide backing and finance for co-operatives or societies established for such work

Chart 4. MEXICO - Women's involvement in FIS (cont'd)

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
Distribution and marketing (4)	- Women's role in fisheries most concentrated - Rural communities marketing is a primary income source for women - In regional market areas sell food products made from fish along with fish - In urban settings, women sell in local markets and to restaurants and other tourist centres, usually salaried, minimum wage - In all market areas, women also sell artistic articles made from fish	- Indirect constraint from modernization of the extraction process, larger boats/stronger motors - Larger catch can be sold directly to distant markets, excludes women's involvement in marketing and processing - Deprives women of productive source of income - Work is potentially seasonal, dependent on supply and species - Inadequate access to markets that are oriented frequently toward men - Inadequate access to extension and technical assistance for training in marketing techniques, etc. - Success often determined by condition of distributional infra-structure - Access to credit - Competition for women's time, along with household responsibilities - Inability of women to be more mobile, to market product in other areas	- Introduction of refrigerated transportation and objective of enlarging catch volumes has increased opportunities for women in marketing - Develop appropriate technology if modernization of extraction process is pursued - Prepare women for alternative employment if strategies of modernization reduce their productive roles, will also impact on policies toward training, co-operative extension and credit financing - Promote the organization and training of women to manage, conserve and prepare foods - Hold courses at women's workplace on how to unload boats, pack and sell products on the beach and in regional markets - In tourist zones, offer marketing - type training in conjunction with restaurants, hotels and worker unions - programme to be jointly administered by Secretaries of Fisheries and Work and Social Welfare (government policy) - Give women training to market/ distribute arts and handicraft items made from fish - related resources, especially in tourist areas
Consumption (5)	- Women involved in food preparation, main decision makers for food choice - In some regions of the country women have made certain fish dishes into specialty	- Inadequate access to extension agents, sources of technical assistance related to nutrition/ consumption/preparation of food - General socio-economic conditions - Ability to purchase adequate food - Access to food supply - depend on harvest and species available	
Industrial inputs (6)	- Women are involved in netmaking and repair and teaching the young on the job, in skills - Women are active in gathering the salt that is used for rural fish preparation - Water used for cleaning fish is carried and transported to work-site by women - Wood used for drying/smoking fish is gathered/transported by women - Women responsible for chopping or cutting the ice needed for freezing fish	- Introduction of mechanization to fabrication of nets, ropes, and mesh has reduced women's opportunities - Inadequate access to extension workers, other sources of technical assistance - Types of resources and inputs available determine type of work/ division of labour - Inadequate exposure to experience with latest technological methods - Traditional division of labour - Competition with women's traditional household duties	

Chart 4. MEXICO - Women's involvement in FIS (cont'd)

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
Government policy (7)	- Goverment interest in defining numbers of women and their role more precisely - 1983-1986 Programme of Village Visits undertaken to estimate role/tasks of women - Fisheries Secretariat at national level conducted diagnostic survey of women in fisheries, concluded women are underestimated - Government undertook a survey of fishing communities, gives first - ever detail on numbers of women, male/female division of labour - Women's role decreasing pre-1980, government policy has reversed trend - overall increased support of fishing, more women's opportunities in processing, women's co-operatives formed, center on oyster cultivation (1982) - Women trained as professionals offering administrative, legal, technical and equipment maintenance assistance to fishing villages - Women trained as professional facilitators to live in villages and assist women's groups specifically	- Inadequate resources to conduct needed programmes in all places of country at once - Lack of good data on women's role in fisheries	General women development objectives for fisheries - Organize/train groups of women to improve ability for fishing tasks - Promote aquaculture production units for peasant women - Improve/upgrade general working conditions - women - Improve living conditions and family standards - Promote artisan-type activities, - Provide basic education to women Specific women development policy - Women professionals trained as facilitators specifically to assist women and to live in rural fishing villages, technical assistance/social service, organizational support and upgrading production aspect of women's involvement - Women professionals trained for overall village extension work, dedicated to aquaculture, equipment repair and maintenance, some also to legal and administrative affairs - Training grants and loans for both sons/daughter of fisher families - 2-year course, co-operative administration/management, 13% female enrollment - Strengthen aquaculture - to provide employment and upgrade rural diet - National Peasant Confederation, training rural women for more productive fishery roles, and increase general fish consumption in country - Training for interior water cultivation of oysters - Facilitate ways to obtain financing and credit - Channel more resources into strengthening women's organized groups - Channel investment into aquaculture projects and into infrastructure needed to support aquaculture - Promote/expand/upgrade system's extraction/management of species that bring more money, shrimp, abalone and lobster, oyster and trout - Construction of rustic tanks and mixed farming/fishing activities for women in various communities, regional development programmes: Unidades Agricolas Industrias Para la Mujer, 1984, sponsor
Ownership structure (8)	- Women becoming involved in ownership/management of oyster cultivation projects, run by women's co-operatives - At village level entire family functions as economic unit with roles assigned accordingly - Processing, marketing, distribution largely under male ownership - State-owned plants, women moving into management - Government level, women moving into management/supervisory positions - Women own, manage, work in fish farming production units - selected areas of country	- Traditional division of labour - Inadequate access to credit, equity and training - Inability to have government projects in all areas of country where needed - Inadequate access to extension workers/technical assistance - At village level, competing demands of household duties	- Provide women with more access to credit and financing - Access to women for training in management, bookkeeping, accounting - Where appropriate, extension or technical assistance in co-operative development, and in leadership training for women - Access for women to jobs in upper level management - Business development advisory and consultant services for women

Chart 5. SENEGAL FIS

Development objectives	Present constraints (component)	Enhancements for further development (component)	Strategies (component)	Plan of action (component)
1. Increase of local consumption (food security) 2. Increase of production for export 3. Increase employment and incomes 4. Reserving exploitation of stocks exclusively for Senegalese nationals. Development policies 1. Privatize commercial fishing 2. More emphasis on supporting artisanal fishing "Priority action programme" (CNCAC, CAPAS) 3. Integration of fleet development with on land handling and processing facilities. Country and programme structural re-adjustment	- Traditional target species for export have reached optimum level of exploitation (1,2) - Migratory nature of tunny fish (need for regional co-operation) (1,2) - Competition between industrial and artisanal fishing for stocks nearest the coast (1,2) - Age of industrial fleet is high and technology used inefficient generating high operating cost (fuel maintenance) (2,6) - High operating costs and below 50% capacity utilization in industrial processing. Maintenance of excess labour force expansive(government regulations). Excess capacity is not in relation to quantity and type of present catch. Old processing equipment (3,6) - High electricity and fuel costs (2,3,6) - Lack of investment finance hinders modernization (2,3) - Artisanal processing has not undergone technological development corresponding to artisanal fishing. Rather primitive methods of fish preservation lacking in hygiene and quality control leading to high spoilage (3,4,5) - Lack of organizational structure (fragmentation) and expertise for both domestic distribution and export (4,5,7) - No links between landing sites and cold stores facilities in interior (4,5,7) - Low and uneven distribution of income of domestic consumers (concentration on urban markets) (4,5) - Total dependency on export demand ignores the need for low cost fish as source of protein (5) - High cost and inferior quality of ancillary services (6)	- Large resources of pelagic and unexploited potential of deep sea demersal species (1,2) - Large domestic demand which is not satisfied especially in inland areas (5) - Potentially large export markets in Africa in addition to established markets in Europe (9) - Long fishing tradition (good fishermen skills) (2) - Availability of industrial services and infrastructure facilities (6) - Up-stream and down-stream economic integration of the artisanal sector (8) - High government priority and indirect involvement (7,8)	- Increase utilization of deep sea demersal stocks and increase catch of small pelagic (2) - Replacement and modernization of fishing fleet to cut operating costs (2) - Improve fishing techniques (2) - Streamline processing capacity and diversify production (increase in quality and value added) (3,5,9) - Organize and improve ancillary services (6) - Improve marketing organization and infrastructure facilities (4,5)	Addressing especially exploitation, processing and marketing 1. Financial assistance - Credit maritime - provision of credit to modernize and re-structure commercial fleet (2) - Central Economic Co-operation Fund (CCCE) - assistance in establishment of privately operated Senegalese fleet of rod fishing tunny boats ensuring continuous supply to 3 tunny fish canning factories (2,3) - National Agricultural Credit Fund (CNCA) - provide credit facilities to small traders to improve equipment for preservation and transport of fish to inland markets. Two regional projects (4,5) - Fund for the Promotion of Fisheries and Subsidiary Industries (CEPIA) - provides support to companies in financial difficulties (2,3) - Fuel subsidies for commercial fishing (2,6,9) - Preferential charges for electricity for processing plants (3,6,9) - Export subsidies - reduces the cost price and increases the export competitiveness of fish and fish products (15% of FOB value) (3,9) - Investment legislation - tax exemptions on equipment purchases, sales, profits (6) - Provision of infrastructure, ports, markets with cold stores, roads, etc. 2. Technological development - Centre for assistance to artisanal fishing in Senegal (CAPAS) - supply of motors and fishing equipment to artisanal fisherman (2), assistance in marketing (4) - Diversify industrial fish processing (3,9) - Upgrade and develop new methods of artisanal processing (3,4,5) - Maritime training, school training of sea-going personnel (2) 3. Institutional and supporting back-up - Fishing agreements with foreign companies include clauses of facilitating access to foreign markets and research of stocks - Group of Fishing Ship Owners and Industrialists in Senegal (GAIPES) assist in consolidation of individual exporters to take advantage of transport and marketing services offered by the Senegalese Foreign Trade Centre (CSCE) (4,9) 4. Regulatory measures - Fishing rights are regarded as property of the state. Fishing areas have been designated to the advantage of Senegalese nationals - Legislation lays down the boundaries of various fishing zones according to the fishing methods used (1,2) - Oceanographic research institute - assessment of stocks (1) - Surveillance of fishing zones (PSPS) (1)

Chart 6. SENEGAL - Women's involvement in FIS

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
Resource management (1)	- Women occupy relatively minor role - National level staff of 89 - 5 women (2 advanced research positions) - Fisheries Development Administration, 13 of 237 are women (5 technical or upper level positions--trained at Oceanography and Marine Fisheries Technical School) - Women with technical training employed in desk jobs; involved with extension work relating to management of women's co-operatives, and fish processing tasks		- Evaluation needs to be made of potential oyster and mollusk reserves; develop better approach to exploiting and managing reserves; important impact on women's involvement - Involve women more in oyster farming; indicates need for training in literacy, and requisite breeding/ management techniques - In Casamance area - introduce oyster culture and shrimp farming; maintain integrated focus to projects - incorporate exploitation, processing, and marketing; strengthen geographical and seasonal management already occurring - Strengthen extension services available to women; allow women to be involved in management of own projects; train local women in project management techniques - Raise level of training for women fishery technicians; include in courses, training in pedagogy and project management - Provide training and technical assistance for women that improves conservation techniques - Train more technicians for local areas to deal with socio-economic problems of women employed in fisheries
Extraction (2)	- Participation differs according to region and type of catch extracted, especially active in oyster-gathering - Work is seasonal, usually from January to June, July; frequency of work depends on product supply and other activities of women - In Casamance region, 2,000-4,000 women involved from 59 villages - represents 15% of economically active women - Ages from 24-75 with 44 about average; older women work because younger girls migrate to work in processing factories - Women work individually (35% of time) or groups of 2-4 called "companies", based on kinship, age or neighbourhood; may share a dugout, post-harvest work, sales, tasks and profits - Must usually borrow/rent dugout repay by cash and small in-kind gifts - end of day, month or season - Diola Rame women specialize in raw oysters - In Saloum area women in co-operative involved with harvest of yeet and pagne; gather by hand at low tide - Women gather mollusks in the Casamance Maritime but is only marginal activity - one month/year - In Thiès region - males raise oysters but women harvest pagne - On island of Fadiouth all women (15,000) and some children participate in harvest of pagne; year-round activity but slackens in rainy season when becomes 2nd place to cereal/ground-nut crops	- Rural exodus of young girls means older women cannot engage in expeditions for oyster-gathering - Droughts and decline in rice-growing may impede access to product, interfere with harvesting ability - Work is inadequately remunerated - Facilities deficient - women are dependent on one vessel that shuttles from Dakar to capital of oyster-gathering region - With mollusks, there has been unrestrained exploitation and specimen decreasing in size - Competition for time from household activities and children - Women's activities may yield income/profit due to husband often being polygamous, bestow no decision-making power on women - Women typically do not own dugouts-must rent/borrow and pay for use - Traditional ideas about division of labour between sexes	- Introduce oyster culture and shrimp raising - Focus on integrated development approaches and integrated project approaches encompassing resource exploitation, processing and marketing - Involve young girls in project planning especially when they return from the city during rainy season to help with fish-related tasks - Try to address causes of rural young women's outmigration through project and development approaches

Chart 6. SENEGAL - Women's involvement in FIE (cont'd)

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
Processing (3) (a) Small-scale	- Women typically predominate - mostly fishermen's wives - The involvement of women may differ as per type of species and village; some species and some locations have tradition of employing only men - Sample of women show average age 41, most married, must work to supplement family income - Profits may be realized but vary as per species and whether paid on piecework basis or by fixed price per unit - Women may be involved in permanent or seasonal work and may work individually or on a family basis at prescribed workplace or in home - home-based products used for family and for sale (semi-preserved products) - Same women may be involved in both processing and marketing	- Women may make profit; however, in polygamous households, gives woman no decision-making power in family - Work is not constant; depends on availability of fish - Environmental factors and processing usually occurs in dry season - Processors often do not calculate profits correctly - do not allow for risks - There is shortage of equipment/ facilities for adequate processing - Not enough resources devoted to researching new/better processing techniques - Impacts unfavourably on tourist trade along the "Petite Côte" because of smoke and odors - Price disparities among processing locations - Reflection of how well centers are or are not integrated with the market - Traditional ideas about division of labour	- Eliminate pollution as side-effect in areas where processing can be a nuisance; must involve women - if not they may boycott processing centre as has already happened - Equip processing centers with adequate infrastructural facilities, permitting production of long-lasting high-quality semi-preserved product to supply hinterland and neighbouring countries - Provide women with literacy instruction and training in preparation of product for export - Provide hygienic standards, improve overall workplace conditions - Need to provide adequate number of infrastructural facilities - smoke-curing chambers, cemented drying areas, drying, salting tanks, warehouses - Need to initiate research into new techniques, experiment with new techniques
(b) Industrial-scale	- Women predominate, are preferred for washing, sorting, discarding tinning, and related jobs at canneries and at fish marketing establishments - Of about 6,000 jobs, 2,000 are permanent - these reserved for men - Women usually occupy temporary positions and are classified as "packer-finishers"; of 1,000 classified - about 2,000 women on waiting list for employment - Women do work of forepersons/mid-level positions but always under directors or production head who is male - Women in executive processing jobs are rare - Women age range 17-58 with average at 35; indicative of massive exodus of young girls/married women from rural - Most women emigrants join a husband who has left rural, found remunerative employment, or, to supplement husband's income; only from Casamance area do young girls migrate together, end-up living together - Typically work eight-hour day, depends on product supply	- Most work is contractual and seasonal - Technological innovations and mechanization of work (in canneries especially) bind women to their machines - No room in jobs for individual initiative - Workshifts are held responsible for specific labour-material output - yet individual's chance of being rehired each morning as part of temporary workforce, depends on group's production - Work unsteady from day-to-day - Poor working condition in factories; failure to provide employers with adequate equipment to achieve designated output - Insufficient lighting, stand-up work stations, inadequate industrial hygiene - Work mostly seasonal/temporary; women in least prestigeous, most poorly-paid jobs	- Provide women with literacy training in the national languages - helps ensure that safety/industrial hygiene standards followed - Most women recruited are young girls from south; need training in hygiene, general health, child care, family planning; need adequate housing - Need to prepare more women for forewomen and production manager position; training needed not available locally - may need to recruit from non-fishing related technical training courses

Chart 6. SENEGAL - Women's involvement in FIS (cont'd)

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
Distribution and marketing(4)	- Women's involvement differs by area of country and product (Casamance area, women more predominant) - Typically, women are modestly represented; involvement has declined in some places in relation to men - In fishing families, the wife automatically is involved in marketing and distribution; deals with the fishmonger - negotiates purchase, etc.; woman unload/sort fish; when dealing with retailers women also process fish - markets supplied directly from unloading sites - Retail trade in small-scale processed catch increasingly woman-dominated, especially in capital area; men typically supply hinterland area - In Casamance and along the "Petite Côte", commercial trading is conducted by the women who process the fish, or, through intermediaries; these trade flows involve dried, fermented products - Some women do become fishmongers, deal in fresh fish; however, number of women declined in 1986 and in contrast to men, who deal in all species, women tend to specialize in species bringing highest market prices - There are other women called "irregulars" who unlike official fishmongers, market over short distances, quantities not exceeding 200 kg	- There is a high transport cost to women involved if they want to take their product to communities for best prices - In interior, there is inadequate transportation/distribution infrastructure - discourages fishmongers from serving the interior - An absence of credit arrangements enabling fish traders to equip selves with temperature-controlled containers for shipping product to market - Women may gain some profit; polygamous family setting, however, means women receive no decision-making power with income	- Organize women into economic "fish-trader" groups; enable them to provide guarantee if eligible for bank loans; make possible equipment purchase under policy of National Agricultural Credit Fund - Provide woman with training in book-keeping and business management methods - Women with university degrees who enter fisheries sector with aid from Senegal Government/West African Development Bank require training in food and health sanitation and in marketing techniques - Increase distributional infrastructure to upgrade quantities reaching markets; demand for fish should increase as stock-raising declines due to worsening environmental conditions in Sahel - Upgrade quality of fishtraders' equipment and unhealthy market place conditions and facilities for unloading/packaging fish - conditions lead to sizeable losses, which discourage women from becoming fishmongers, especially to serve the interior
Consumption (5)	- Women play important role in choosing/promoting fish as dietary element - Less consumption in rural areas - 70% of population but consume only 38% of fish product		- Prepare nutritional campaigns, dietary programmes to increase fish consumption especially in rural areas - Improve distributional infrastructure and conservation methods so that more fish are available for consumption especially in the interior - Provide training/extension workers capable of giving advice, technical assistance to women regarding consumption/preparation of fish for family
Industrial inputs (6)	- Little data or information available on women's involvement		- Gather data and information on women's involvement; develop policy/ strategies on basis of information - Gather information about availability of jobs and probable barriers that women may face in acquiring employment for jobs related to industrial inputs; train women for jobs in appropriate occupations/industries/sectors

Chart 6. SENEGAL - Women's involvement in FIS (cont'd)

Component	Present involvement of women	Constraints	Development strategies/ recommendations/action
Government policy (7)	- Want better understanding of fish sector's potential, conditions for exploitation/valorization of potential through co-ordinating with women involved at local/ employment level		- Take steps to provide productive preparation and opportunities for young women - Develop better understanding of social and economic problems facing women; identify priority areas and personnel/ technicians needed to address; provide needed training - Integrate women into overall fisheries development approach as opposed to isolating through special projects - Provide appropriate training/basic education to enhance women's integration - Provide proper/adequate credit and financing arrangements to enhance women's integration - Provide more extension assistance, women agents aware of women's issues/conditions along with own technical expertise; agents capable of both training and technical assistance extension work - Upgrade workplace conditions and supporting infrastructure for women - Adopt integrated development approach in rural areas, both for projects within fisheries sector and for agriculture; in fisheries sector, enhance women's ability to undertake multiple roles of harvesting, processing, distributing and marketing - Take steps to not strain rural areas labour force that suffers from urban migration, integrate young girls when they return from city in rainy season, involve them in project planning; address action to stem rural exodus by incorporating: . need for women to earn money . offer greater variety of consumer goods . redress imbalance between population levels and land acreage suitable for growing rice . redress general inadequacies of school system that favours boys . strengthen transportation facilities (distribution and marketing) . reduce excessive number of middlemen in marketing (distribution and marketing) - Take general measures to enhance the integration of women and other least advantaged segments of population

3. DISCUSSION ISSUES AND THEMES

Several recurring themes have emerged, from the combined case study analysis and review of supporting literature on women's participation in the fisheries industry. These themes, or issues, delineate concerns that should be considered when development objectives and policies are established. These are highlighted below, along with a summary of the major points pertaining to each.

(a) Need for statistics, qualitative planning information and research on the role of women in fishing. The planning of development strategies, actions and projects require information about the number of people in the target population, their demographic traits and their needs. Definitions for formal census and data sets in developing countries traditionally exclude women from the count of the economically active population and of formal employment. As a result, gender-specific employment information is needed. Additionally, information about where women are, what they do and how they spend their time, needs to be examined. There is common acknowledgement that women make valuable contributions to the fishery industry. However, until the contribution is identified and described, adequate policies and actions are difficult to make. In an example of planning technical assistance or training, the way of delivering the assistance, the content of the assistance, and the determination of the overall need for the assistance can only be carried out successfully when based on an adequate information base.

(b) The trade-off between skill training and general education. Much of the literature on women in fisheries calls for more skill training, skill upgrade training, or training in everything from elementary book-keeping to mid-level management. The literature also states a need for adult literacy and basic education assistance. More detailed work needs to be done regarding occupations within the sector for which training is genuinely needed, versus, job skills which can be taught quickly, on the job. Course content for the training needs to be carefully studied so that the type of materials, level of difficulty, and presentation methods accurately reflect the ability of the target population. Many women in the fisheries sector undoubtedly need literacy and adult basic education. However, this is perhaps more of a general women's need, best addressed on a village, neighbourhood, or kinship level. As such, the development and administration of general education might best be undertaken by the national government and administered at the village level, for all women. In all events, before education and skill-training programmes are implemented, solid answers should be provided to the question of "How much training, for how long, for what end and for whom?"

(c) Employment generation and intersectoral analysis and planning. One of the typical developmental objectives is to bring people needing jobs and available jobs together. Research is likely needed to identify more specifically the fisheries and non-fisheries jobs available for women, especially in rural areas. Additionally the industrial and employment potential of these areas needs to be identified carefully. The reason for doing this is to determine what the mid-to longer-term employment potential is for women in the fisheries sector. The employment analysis should look at the probable growth or decline of the sector, expected technological changes and other relevant labour market factors. Decisions should then be made regarding the feasibility of preparing women for the jobs and measures needed for the

preparation. The final outcome may be to discourage women from entering fishing-related activities, in which case, productive options in other industrial sectors should be available. In many cases, government policy and action may be needed to actually create jobs in other sectors, or, indirect jobs in fishing-related sectors.

A second related but somewhat distinct issue is whether women should be prepared for, and/or steered into low-level processing FIS jobs, except as a stop-gap measure. Such jobs typically require little training and are often of a dead-end variety yielding little security or advancement. Rather than permit women to languish in such jobs, thought might be given to using such employment for women to earn income while preparing for other employment, especially in urban areas with greater training availability.

Yet a third issue, is the dual need to open up access to upper level and management jobs in the FIS at the same time that women are encouraged to train for such jobs. To emerge from intensive training only to become underemployed or unemployed adds to serious labour force problems found in most developing countries.

(d) The need to follow a policy of integrated development at both the sector and project levels. At the sector level, especially in the small-scale rural side of the sector, this means tying-in, fisheries and agricultural types of strategies. What this may mean is planning for crop planting and harvest cycles that coincide with seasons when fishing is not productive or profitable. Additionally, in terms of fish-farming, there would be careful planning to ensure that adequate food/livestock sources are available for needed fishfeed. In a similar vein, in instances when technological innovations in either fishing or agriculture are expected to displace women, plans could be laid for optional, productive activities in the related sector.

At the project level, integrated development signifies at least two types of actions. One is an emphasis on dealing with the entire chain of tasks that village women perform. Rarely do fisherwives perform only extraction (i.e., fish farming) tasks, or only processing or marketing and distribution; typically one woman will be involved in all three activities. When talking about enhancing/expanding/upgrading women's role then, policies and strategies should be selected that strengthen women's overall productive performance, not just for one or another group of tasks. The second type of project action is one that addresses the entire fishing household. Typically, in the small rural villages, the household functions as an economic unit with roles assigned, often, on the basis of traditional male/female divisions of labour. At least some attempt to upgrade the productive well-being of the entire economic unit is recommended.

(e) Need to give attention to longer-term preparation of boys and girls for FIS activities. In both rural and urban areas, FIS policies need to focus on both the current and future source of trained manpower. This means that some attention is needed to ensure that children and adolescents of both sexes receive a good overall education. In rural fishing villages, care should be taken to ensure that familial/economic necessities do not disrupt formal education. Also, for adolescents, preparation for a productive future should be ensured. In training for FIS activities, quality programmes should be accessible to both sexes. The same principle applies equally to non-FIS preparation. Such preparation should be conducted in conjunction with the employment generation activities discussed in point (c).

(f) Government policy needs to capitalize on the women's involvement with raising nutrition standards and fish product consumption. It is a common objective in fishery development plans to increase and diversify domestic consumption of fish. Fish and fish products form a significant part of human nutritional supply and in many developing countries are the main source of animal protein. Increase in production (another common objective) will not of itself result in increased consumption. Marketing and production need to be co-ordinated and differentiated to address different target groups and linked to educational/nutritional programmes. The involvement of women in processing, marketing and consumption components of the FIS is significant although not formally assessed and/or remunerated. Much can be gained by capitalizing on women's present role in determining to a large extent the diet of the family. More active involvement of women as consumers in both planning and implementation of educational/nutritional campaignes should be the first step in determining the level and profile of marketing and processing (top down disaggregation of FIS).

(g) Extension services and technical assistance should be made available to rural/artisanal women, but should not isolate the women as a group from village men. In the past, and currently, women, because of socio-cultural traditions have been denied access to extension and technical assistance services. Frequently, this was because their economic contribution was grossly underestimated. Given that women currently play and will continue to play an important role, they need access to information about government services and policies, assistance with adapting to structural and technological innovations, and help with tasks such as forming co-operatives, obtaining credit and improving skills. However, the delivery of such assistance should not disrupt the socio-economic and cultural traditions of the village and should, where possible, follow the approach of integrated development approaches discussed in (d).

The content and type of extension/technical assistance offered needs to receive study and to be aligned closely with needs of the population to be served. Extension services may be an effective way to carry out many training and educational tasks mentioned in (b) and to gather information/statistics discussed in (a).

(h) Socio-cultural traditions heavily influence the current structure of women's work - these need attention from government planners, project staff and similar individuals. Attention to socio-cultural traditions in terms of attitudes, beliefs and behaviour underlies the success or failure of many programmes and projects. Such traditions should not signify that various projects designed to foster change should be discarded. Rather, what is needed is that such traditions be identified and then accounted for or addressed during project planning and implementation. These traditions are what ultimately will influence the acceptance or rejection of the local people towards new innovations and practices. Attention to these is extremely important in the area of opening new employment opportunities for women.

(i) Attention is needed to determine the most effective way to provide women with credit, financing and banking support. Credit and financial support is crucial to the success of many women's projects. However, the manner in which women are given access to such assistance needs to be examined. Access for women may require legislative changes, lower interest rates, longer repayment schedules, waivers of equity for receiving loans, the forming of co-operatives, and so forth. The most appropriate measures will

differ from country to country and can only be determined on the basis of information about women's needs (discussed in (a)), the economic situation (as described in (b)) and socio-cultural traditions (mentioned in (h)).

Closely related to this theme is that of the ownership structure throughout the FIS. The position of women probably assumes more importance in proportion to their representation in the ownership structure. However, providing women with ownership rights needs to occur within the context of the same factors mentioned in the preceeding paragraph.

(j) Legislative initiatives necessary for improving the status and role of women need to be researched and identified. In a variety of situations, government-sponsored legislative initiatives may be the best way of enhancing women's status and role. This is especially true in relation to jobs in large-scale processing factories. Legislation may cover wages, training, promotability, shift-work, health and safety practices in the work place, and so forth. In other components of the FIS, a similar orientation holds. Legislation may be needed in relation to financing and credit, to ensuring health and safety practices at the rural processing worksite and participation in the ownership structure. As already mentioned under other themes, the need for the initiatives needs to be identified carefully on the basis of information about the women's needs and implemented in accordance with socio-cultural conditions.

(k) As appropriate, men and women in fishing villages should participate in planning, implementing and evaluating projects and technical assistance programmes designed to assist them. Ways should be developed to elicit the participation of fisherfolk in all aspects of project/technical assistance, planning, implementation and development. The success of a project is frequently enhanced when developed along with, rather than imposed upon the communities. Examples of such measures can include training community residents to administer their own projects, providing leadership training for men and women, and surveying/interviewing community residents to determine needs, strengths, perceptions, and so forth.

Literally, an endless list of such general themes could be completed and discussed. These are only examples of the many that appear to apply generically across countries and cultures. While important, these and others themes take on the most meaning when viewed from a more concrete, country-oriented discussion of needs and actions. Similarly, they become more meaningful when examined in relation to the overall FIS orientation of a particular country. This will be the outcome of the analysis being undertaken for the complete study on women's integration in the FIS.

For the guidance of our publications programme in order to assist in our publication activities, we would appreciate your completing the questionnaire below and returning it to UNIDO, Studies and Research Division, Sectoral Studies Branch, D-2073, P.O. Box 300, A-1400 Vienna, Austria

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Q U E S T I O N N A I R E

The integration of women in the fisheries industrial system

		(please check appropriate box) yes	no
(1)	Were the data contained in the study useful?	☐	☐
(2)	Was the analysis sound?	☐	☐
(3)	Was the information provided new?	☐	☐
(4)	Did you agree with the conclusion?	☐	☐
(5)	Did you find the recommendations sound?	☐	☐
(6)	Were the format and style easy to read?	☐	☐
(7)	Do you wish to be put on our documents mailing list?	☐	☐
		If yes, please specify subjects of interest	
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